

ABSTRACT OF THE DISCLOSURE

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A method of applying total liquid ventilation to a patient according to a ventilation cycle including inspiration and expiration profiles, comprises supplying oxygenated liquid to the lungs of the patient, withdrawing liquid from the patient's lungs, and controlling independently supply of oxygenated liquid to the patient's lungs and withdrawal of liquid from the patient's lungs. This supply and withdrawal independent control comprises producing a ventilation cycle having independently controlled inspiration and expiration profiles. To carry out the method, a total liquid ventilator system comprises an inspiration pump for supplying oxygenated liquid to the lungs of the patient, an expiration pump for withdrawing liquid from the patient's lungs, and a ventilation cycle control means. The ventilation control means comprises first and second pump controllers connected to the inspiration and expiration pumps, respectively, to control independently these inspiration and expiration pumps in order to produce a ventilation cycle having independently controlled inspiration and expiration profiles.